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09/487,405 01/18/00 SINGH KHANUJA

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HM12/0705

EXAMINER

CHAKRABARTI, A

ART UNIT

PAPER NUMBER

1655

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/487,405

Applicant(s)
Khanuja

Examiner
Arun Chakrabarti

Art Unit
1655



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 10, 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jan 10, 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 3 are rejected as indefinite because the instantly claimed methods lack a final process step that clearly relates back to the preamble. For the method of claims 1 and 3, the preamble of the instantly claimed method is drawn to a method for the selection and development of an insect tolerant genotypes or clones while the final process step is that of field evaluating under natural or artificial insect infestation conditions in step (d) and it is thus unclear as to whether the instantly claimed methods are drawn to a method for the selection and development of an insect tolerant genotypes or clones or rather field evaluating under natural or artificial insect infestation conditions. Method claim requires a last step or phrase in the last step that states the accomplishments of the goals for the method which were stated in the method's preamble.

Claims 1 and 3 lack such a last step and are confusing because the additional method step is not sufficiently set forth. While minute details are not required in method claims, at least the basic

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steps must be recited in a positive, active fashions. See Ex parte Erlich, 3 USPQ2d1011, p.1011 (Bd. Pat. Applicant. Int. 1986). It is suggested that an amended claim more clearly describing the intended steps be submitted.

Claims 2, 4 and 5 recite the limitation "A" in the beginning of the claims. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 is rejected over the recitation of the phrase, "may cover". Regarding claim 4, the phrase "may cover" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. It is also not clear whether insect pests are physically covered by insect tolerant plants to kill them or the insect killing property of the plant is propagated in the newly developed plants. The metes and bound of the claim is vague and indefinite.

Claim 5 is rejected over the recitation of the phrase, "could be generated". Regarding claim 5, the phrase "could be generated" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-2, 4 and 5 are rejected under 35 U.S. C. 103 (a) over Sondahl et al. (U.S. Patent 5,436, 395) (July 25, 1995) in view of Gilbert et al (U.S. Patent 6,187,999 B1) (February 13, 2001) further in view of Jones et al. (Journal of Economic Entomology, (1979), Vol. 72, pages 628-632).

Sondahl et al teach a novel screening method useful for the selection and development of an insect tolerant genotypes or clones (Abstract, Column 5, lines 39-52 and Column 11, lines 36-38 and Column 14, lines 40-41), the method comprising the steps of :

a) generating the clones of an insect tolerant plant through tissue culture as somaclones and establishing their molecular distinctiveness prior to screening through analysis at in vitro stage itself (Abstract, Column 5, lines 39-52 and Column 11, lines 36-38 and Column 14, lines 40-41, Figure 1 and Examples 2, 9 and 10 and Column 6, lines 24-49);

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b) micro-propagating the identified molecular variants for multiplication and checking for the stability at molecular level (Figure 1 and Examples 9 and 10 and Column 6, line 50 to column 7, line 22);

c) transferring the identified stable variants after being multiplied to individual culture tubes (Column 7, lines 23-47); and

d) multiplying in-vitro the surviving clones and then field evaluating under natural or artificial conditions (Column 7, line 48 to column 8, line 2).

Sondahl et al teach a novel screening method wherein the plants are raised by somacloning (Abstract and Column 5, lines 39-52).

Sondahl et al teach a novel screening method wherein the insect tolerant trait of the plant may cover insect pests which feed on the foilage of the plant (Column 11, lines 36-38).

Sondahl et al teach a novel screening method wherein the clones could be generated vegetatively, tissue culture, glass house or in field by asexual reproduction method (Column 5, lines 39-52 and Column 7, line 48 to Column 8, line 2).

Sondahl et al do not teach the checking for the stability at molecular level through RAPD among plant clones of larger population.

Gilbert teaches the checking for the stability at molecular level through RAPD among plant clones of larger population. (Column 5, lines 45-52).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the checking for the stability at molecular

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level through RAPD among plant clones of Gilbert with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al. since Gilbert states, "There are many techniques available for the analysis, comparison and characterization of plant genotype and these include isozyme electrophoresis, restriction fragment length polymorphism and randomly amplified polymorphic DNAs (RAPDs) (Column 5, lines 45-52)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". An ordinary practitioner would have been motivated to substitute and combine the checking for the stability at molecular level through RAPD among plant clones of Gilbert with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al. in order to achieve express advantages, as noted by Gilbert, of techniques available for the analysis, comparison and characterization of plant genotype and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype .

Sondahl et al in view of Gilbert et al do not teach forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference.

Jones et al. teach forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference. (Abstract, Tables 2 and 3 and Page 631, Column 2, second paragraph).

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It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference of Jones et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert, since Jones et al. state, "The screening test results show that both insect non-preference and plant tolerance contribute to the resistance expressed among the soybean genotypes (Page 631, Column 2, second paragraph)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract, last sentence)". An ordinary practitioner would have been motivated to substitute and combine the forced feeding of insects by releasing actively feeding larvae or nymphs and checking for insect larval non-preference of Jones et al. with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert in order to achieve express advantages, as noted by Jones et al., of the screening test results which show that both insect non-preference and plant tolerance contribute to the resistance expressed among the plant genotypes and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype.

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5. Claims 1-5 are rejected under 35 U.S. C. 103 (a) over Sondahl et al. (U.S. Patent 5,436, 395) (July 25, 1995) in view of Gilbert et al (U.S. Patent 6,187,999 B1) (February 13, 2001) further in view of Jones et al. (Journal of Economic Entomology, (1979), Vol. 72, pages 628-632) further in view of Sturtz (U.S. Patent Plant 8,645) (March 15, 1994).

Sondahl et al in view of Gilbert et al. further in view of Jones et al teach method of claims 1, 2, 4 and 5 as described above.

Sondahl et al in view of Gilbert et al. further in view of Jones et al do not teach the insect tolerant mint plant.

Sturtz teaches the insect tolerant mint plant (Abstract and column 3, lines 50-60).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to substitute and combine the insect tolerant mint plant of Sturtz with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert further in view of Jones et al, since Strutz states, "The broad objectives of the breeding program were to try bring together in one plant the characteristic deemed necessary for a successful commercial essential oilcorp. The two most important traits were disease resistance to wilt and rust and an essential oil high in the major peppermint flavor components and low in undesirable compounds (Column 3, lines 50-57)". Moreover, Sonadahl et al state, "In particular, this invention relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype (Abstract,

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last sentence)". An ordinary practitioner would have been motivated to substitute and combine the insect tolerant mint plant of Sturtz with the novel method of induction and selection of somaclonal variation in plants of Sondahl et al in view of Gilbert further in view of Jones et al, in order to achieve express advantages of a program, as noted by Sturtz, to bring together in one plant the characteristic deemed necessary for a successful commercial essential oilcorp and also to get advantages of two most important traits like disease resistance to wilt and rust and an essential oil high in the major peppermint flavor components and low in undesirable compounds and also in order to achieve the express advantages, as noted by Sondahl, of an invention that relates to the unique application of tissue culture methodology as new methods for variety development, breeding and then the scale-up of the selected superior genotype.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D. whose telephone number is (703) 306-5818. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones, can be reached on (703) 308-1152. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission via the P.T.O. Fax Center located In Crystal Mall 1. The CM1 Fax Center numbers for Technology Center 1600 are either (703) 305-3014 or (703) 308-4242. Please note that the faxing of such papers must conform with the Notice to Comply

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Arun kr. Chakrabarti

Arun Chakrabarti

Patent Examiner

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June 19, 2001



JEFFREY FREDMAN
PRIMARY EXAMINER